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Policy

The U.S Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Volkmann's Ischemic Contracture

In the latter half of the nineteenth centruy, Volkmann described ischemic contracture of the forearm, which is characterized by a limb that is painful cold and cyanotic, with loss of motor function caused by rapid necrosis of the muscles and resultant fibrosis and flexion deformity of the fingers. Many reports conclude with the statement that the prevention of Volkmann's contracture is the best treatment. These articles correctly stress the importance of avoiding tight casts and dressings, and the danger of acute flexion of the elbow after supracondylar fractures. However, these precautions often are not enough to prevent ischemic contracture.

A review was made of the records in 92 cases of Volkmann's ischemic contracture seen at the Mayo Clinic, 1935 through 1954. Based on this study, this article attempts to outline the best means of prevention and early treatment when a patient is seen with impending Volkmann's ischemic contracture. An attempt was made to ascertain the cause of the contracture in each instance, as well as to estimate how many of these contractures probably would be preventable by use of present methods of treatment.

Most students of the subject are now agreed that major arterial obstruction is necessary for the production of Volkmann's contracture. The earliest signs of Volkmann's ischemic contracture usually appear 4 to 6 hours after the injury or the institution of treatment. In a few cases, however, the onset has been noted after 48 hours; in others, the delay has been as long as a week. Fontaine and Dany concluded that the condition appears more often in the third or fourth week, particularly at the time of removal of the plaster cast. It appears likely, however, that the contracture had been present longer than this in their cases and was recognized only when the cast was removed.

Of the 92 patients with Volkmann's ischemic contracture studied at the clinic from 1935 through 1954, 44 had this complication after supracondylar

fractures of the humerus, whereas in 18 cases, it followed fractures of both bones of the forearm. Other causes were fractures of the shaft of the humerus (7 cases), severance of a major artery or arteries as the result of lacerations or gunshot wounds (7 cases), dislocation of the elbow (4 cases), and miscellaneous conditions (12 cases).

Sixty-seven of the 92 patients were male and 25 were female. The average age at the time of injury was 16 years. The average time that had elapsed from injury until the patient was seen at the clinic was 35 months, with a range of 4 hours to 27 years.

The contractures were classified as to the grade of severity. Grade 1 contracture was the mildest, with absence of nerve deficit. Grade 2 contracture was worse than grade 1, but moderate function of the involved muscles remained and nerve deficit was absent. Grade 3 contracture presented only slight function in the muscle fibers, severe contracture, and some, but not total, nerve deficit. Grade 4 contracture included severe nerve deficit and no active muscular function; the hand was practically useless in such cases. Eight of the contractures were classified as of grade 1 severity, 32 were grade 2, 32 were grade 3, and 20 were grade 4.

It is evident that tight bandages, tight plaster-of-paris casts and acute flexion of the elbow are to be dispensed with after injuries to the upper extremity if Volkmann's ischemic contracture is to be avoided. However, tight casts or bandages may not be the main cause of the contracture, but may only aggravate a previously existing circulatory disturbance.

The author is of the opinion that the following outline of treatment should be used in severe compound fractures with associated ischemia: (1) Cleansing and debridement of the wound, with extension of the incision into the fascial planes so as to release any intrinsic compression of the muscles or of the ulnar and radial arteries. The lower part of the brachial artery and the entire course of the radial and ulnar arteries in the forearm should be carefully inspected in all instances; if a point of irreparable local damage is observed, arteriectomy should be carried out at this point; (2) Delayed, rather than primary closure of the wound; (3) Primary reduction of the fracture or fractures as indicated, provided this is possible and would not be too traumatic. Otherwise, the fractures should be reduced and fixed later after all initial wounds are healed; (4) Application of a bulky Robert Jones type of dressing; (5) Block of the stellate ganglion; (6) Injection of a 5% solution of alcohol by slow continuous intravenous drip; (7) Heating of the other three extremities and the remainder of the body, but not of the injured extremity; (8) Avoidance of elevation of the injured extremity.

A similar procedure would be followed in contusing and crushing injuries of the forearm when the circulation appears to be in jeopardy. The use of hyaluronidase and a solution of procaine, as advocated by MacAusland and associates, to relieve the subfascial tension caused by edema and contusion could be considered immediately after injury; if the response is not

quick, intrinsic pressure should be released by use of relaxing incisions that need not be closed until the early stages of edema and infection (usually 4 to 5 days) have passed. If necessary, grafts can be applied later for skin that becomes necrotic because of burns or contusions. By the adoption of such attitudes, it is the author's firm conviction that the incidence of Volkmann's ischemic contracture can be further reduced. (Lipscomb, P. R., The Etiology and Prevention of Volkmann's Ischemic Contracture: Surg. Gynec. & Obst., 103: 353-360, September 1956)

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Dupuytren's Contracture

The hand is subject to many interesting diseases, but one of its most fascinating is Dupuytren's contracture. This condition was first described in 1831 by Dupuytren, a French surgeon after whom the disease was justly named. Its essential description has not been altered appreciably since that time. It consists mainly of a flexion contracture of either hand, usually localized to the ring and little fingers, although it may include the long and index fingers in some advanced cases. The contracture is due to a fibrosing process of the palmar fascia of the hand, characterized by the formation of taut contracture bands underneath the skin of the palm and proximal to the fingers involved. Usually, a fibrous nodule in the palm in line with the ring finger is pathognomonic.

In this article, the authors review the clinical aspects of Dupuytren's contracture and draw certain conclusions based on the analysis of some 40 cases in which they found occasion to observe and treat this condition.

For full appreciation of the distinctive characteristics of Dupuytren's contracture, a comprehensive understanding of the normal anatomic character of the palmar fascia is necessary. As yet, there is no definitely established cause. Among the causes that have been suspected, but ruled out over the past hundred years, are congenital syphilis, dysfunction of the thyroid, arteriosclerosis, chronic specific or nonspecific inflammation, focal infections, arthritis, gout, artery disease, scleroderma, vitamine E deficiency, and endocrine disturbances. Contributing factors that seem to have some importance in the causation of the disease are heredity, aging, constitutional predisposition, and trauma.

Dupuytren's contracture is a disease of middle life and old age. Aging appears to be a definite contributing factor in its causation. From the authors' observation, it is unusual to encounter this disease in a person below the age of 40 years. There is also a notable difference in the sex ratio, the condition occurring in the male about six to seven times as often as in the female.

The coexistence of Dupuytren's contracture and Peyronie's disease of the penis in some cases has suggested to some authors a constitutional

predisposition to fibroblastic changes in certain areas of the body. Peyronie's disease is a contracture of the connective tissue septum between the corpus cavernosum and the corpus spongiosum.

Occasionally, Dupuytren's contracture occurs in the foot. Trauma as a contributing factor is still favored by a few authors and many cases are reported in which one or more traumatic insults have been held responsible. Certainly, in long-protracted cases of repeated trauma, there is a definite etiologic relation. Some authors have suggested that Dupuytren's contracture may be a sequel to coronary occlusion.

Usually, there is no difficulty in making the diagnosis of Dupuytren's contracture. The patient presents himself or herself with a painless deformity of the palm. Physical examination shows an elevated contracted ridge-like band, visible and palpable under the skin of the palm and extending from the base of the little, ring, or middle finger proximally to the tendon of the palmaris longus. Pain is not common. The skin at the base of the third, fourth, and fifth fingers may be so involved by attachment to the underlying palmar aponeurosis that one may observe dimpling or puckering of the skin in these areas. Each involved finger is flexed at the metacarpophalangeal joint, but the interphalangeal joints are free and mobile, more frequently the ring finger.

A careful distinction must be made between Dupuytren's contracture and fibrosarcoma. Dupuytren's contracture must also be differentiated from other types of contracture that may involve the fingers. Also, adequate history is necessary to rule out the congenital and the spastic contractures.

Various types of treatment have been attempted for the cure of Dupuytren's contracture with varying degrees of success. The only treatment that has stood the test of time, however, is surgical removal of the thickened and contracted palmar aponeurotic sheath. Subcutaneous fasciotomy is dangerous because of the possible injury to underlying nerves and blood vessels, and the recurrence rate is high.

The best exposure seems to be obtained with a reversed L type of incision the horizontal limb of the L extending through the skin in a transverse direction and following the crease in the skin formed by the flexion of the little, ring, and middle fingers. The vertical limb of the L extends on the ulnar side of the palmar skin along the fifth metacarpal bone. An anterolateral incision is used in dissecting the fascia of the fingers. This incision is made along the linea mensalis because at this level the palmar fascia divides just distal to it; thus, there is excellent exposure.

Meticulous preoperative preparation of the involved hand is extremely important for a successful result. The hand should be washed thoroughly several times with phisoderm and a dry sterile dressing should be applied to the hand the night before the operation.

During the operation, asepsis, a bloodless field obtained with the aid of a pneumatic tourniquet, meticulous hemostasis and a minimal amount of crushing trauma or careless wiping of the tissues, are all factors that

contribute to a successful outcome. (Lamphier, T. A., et al., The Clinical Aspects of Dupuytren's Contracture: J. Internat. Coll. Surgeons, XXVI: 232-238, August 1956)

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Complete Heart Block

Complete atrioventricular heart block is a very serious cardiac mechanism disorder and is generally considered to be a reliable sign of heart disease. It may occasionally be present for years without producing any symptoms or signs other than the regular slow heart rate and pulse. Slight giddiness and vertigo gradually develop, but syncope and convulsions are fortunately less common complications, so that complete heart block and Adams-Stokes disease are not synonomous. The etiologic and pathophysiologic factors vary in both and may be changing with the decades. Electrocardiographic studies, which have become more frequent and more extensive, are required for certain diagnoses and have revealed interesting information. Newer and more effective drugs have been introduced and the prognosis has been slightly improved.

The prerequisite for inclusion in this study was electrocardiographic proof of complete heart block consisting of the presence of two independent pacemakers, with the supraventricular focus of faster rate than the idioventricular focus to rule out functional A-V block, as in interference dissociation.

Of 150 records originally diagnosed as complete heart block, only ninety cases fulfilled the criteria outlined. Thus, complete atrioventricular heart block meeting the criteria was a relatively rare cardiac mechanism disorder, occurring only ninety times in 49,000 patients on whom electrocardiographic studies were made.

The age and sex distributions in the reported cases are in general agreement with the data of three comparable series. These data show that the condition occurs more often in the older age groups and more often in men. In this series, the ratio of men to women was about 1.5:1, which is somewhat lower than generally reported.

Etiologically, the cases were divided into two large categories. The first group in which digitalis intoxication was the major factor; the second group in which digitalis had not been used. This second group was then subdivided into: established complete heart block of 4 weeks' duration or longer by ECG as well as clinical observation; transient complete heart block; and complete heart block of undetermined duration, the latter to include those cases where the observation period was too short or information insufficient to accurately establish the duration of the conduction defect.

Of the various etiological factors, atheromatous coronary artery disease, alone or in combination with hypertensive arteriolar disease, was by far the

most common cause. The less frequent etiologies included syphilitic valvulitis in eight patients and rheumatic valvulitis in seven patients. In the group of patients showing "established" complete heart block, diphtheria was the probable etiology in two cases, and a congenital origin was diagnosed in three patients. In this same group, two patients were classed under the "unknown" etiology. Of these, one was thought to have had, previously, either a diphtheritic or rheumatic process, and in all likelihood, the other was congenital.

Acute myocardial infarction was present in nine patients, six, or two-thirds, of whom died within 48 hours after the appearance of complete heart block, confirming the general impression that development of this conduction defect in acute myocardial infarction indicates a poor prognosis. Terminal uremia was a major added factor in eight patients in whom the heart block generally developed shortly before death.

Clinical and radiologic findings of underlying heart disease were common in patients with complete heart block, the most frequent being angina pectoris, cardiac failure, cardiomegaly, and evidences of arteriosclerotic aortic disease. The various underlying etiologies were usually easily diagnosed.

Symptoms referable to the A-V block itself were present in approximately 50% of patients (excluding cases of digitalis intoxication). Of these, about one half (25% of the total) exhibited the classic syncopal or convulsive attacks, while the remainder experienced milder symptoms of occasional giddiness, vertigo, or easy fatigability. Physical signs of complete heart block were usually present, including the slow usually regular pulse and high pulse pressure. Occasionally, variation of the intensity of the first heart sound was noted. Faint sounds of atrial beats with corresponding "a" waves in the jugular pulse were also observed.

In this study, the electrocardiograms of all cases were analyzed. Where available, tracings taken before or after a transient episode of complete block, or those taken prior to the onset of established complete heart block, were also reviewed. Such analysis has brought out some points not especially emphasized in previous reports.

The management of patients with complete heart block depends on the presence or absence of symptoms referable to the mechanism disorder itself. As long as the ventricular pacemaker is stable at a rate of 30 or more beats per minute, no attacks are experienced and no specific therapy is necessary. It is a good policy, however, to try routinely to increase coronary blood flow by the use of vasodilators and to avoid the use of any myocardial depressives or sedatives, including such bradycardic agents as bile salts. If digitalis intoxication is present, all digitalis should, of course, be promptly discontinued at least temporarily and full doses of atropine prescribed.

In the acute Adams-Stokes attack, the usual emergency measures should be employed, including sharp blows to the precordium, pricking the ventricle with a needle, or the intracardiac injection of various drugs. Isoprel, (isopropyl norepinephrine) is perhaps the safest effective drug for intracardiac

injection, but is not readily available, so that epinephrine is generally used. If present, a Zoll stimulator may be tried. If clinically advisable, direct cardiac massage should be attempted.

After the patient has survived one syncopal attack, steps should be taken to prevent recurrences, in general by the use of various drugs, the choice of drug depending in part on the cardiac mechanism producing attacks.

Complete heart block, meeting the authors' criteria, is uncommon. Arteriosclerotic heart disease was the chief etiologic factor in 90 out of 49,000 patients on whom electrocardiographic studies were made. Overdigitalization was the most frequent toxic cause. The QRS configuration or duration is considered an unreliable index of the position of the pacemaker, because bundle branch block frequently may coexist with complete heart block. Isuprel (isopropyl norepinephrine) was found to be the most useful drug in this series, regardless of the underlying mechanism producing attacks. In only three patients was ventricular fibrillation considered the mechanism producing symptoms. The prognosis depends upon the stability of the idioventricular pacemaker, the presence of symptoms, and the underlying mechanism producing attacks. With some exceptions, however, the prognosis of symptomatic complete heart block is generally poor. (Wright, J. C., et al., A Clinical Study of Complete Heart Block: Am. Heart J., 52: 369-377, September, 1956)

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Chronic Obstructive Pulmonary Emphysema

During the last two years, a number of patients with chronic obstructive emphysema have been observed while under treatment with bronchodilator agents and the adrenal steroids, in the course of which the author's attention was drawn to an association between pulmonary emphysema, peptic ulcer carcinoma of the lung, and a high incidence of smoking. The association between emphysema and smoking was so striking that they postulated that smoking is the major factor in the pathogenesis of emphysema in the Boston area. The present report is a detailed analysis of the data on which this opinion was based.

Only after the authors had completed the study did they become aware that an association between emphysema and smoking had been recently described, and that smoking had been assigned a causative role in the pathogenesis of emphysema. It is significant, they believe, that these views were arrived at independently by entirely separate groups of observers.

The patients selected for study were suffering from a diffuse disease of the lungs characterized chiefly by dyspnea on exertion, progressing in some instances to dyspnea at rest, often preceded by, and associated with, cough. The onset was after the age of 40, and the disease was more or less

progressive. In most instances, there was evidence of hyperinflation, namely increase in the A-P diameter, a hyperresonant percussion note, and low fixed diaphragms with distant breath sounds. Musical rales and wheezing were present in some and absent in others. An x-ray examination usually revealed radiolucent lung fields with low fixed diaphragms. In some instances, there were areas where the lung markings were replaced by bullous changes.

As a result of this study, findings would appear to establish an association between pulmonary emphysema on the one hand and smoking on the other. In view of this apparent association and the changes that have been described by some at necropsy, the authors propose that emphysema commonly arises as an irritative bronchiolitis caused by tobacco smoke. Such an assumption explains the following: (1) occurrence of emphysema in the older age group, those who have had sufficient time to expose themselves to a considerable quantity of tobacco smoke; (2) predominance of males among patients with emphysema; (3) association of chronic pulmonary disease with peptic ulcer which has been discussed elsewhere; (4) presence in this small group of two patients with carcinoma of the lung. These considerations do not imply that tobacco smoke is the only possible cause of emphysema; in some areas, air pollution caused by industrial processes may be important.

As far as the authors are aware, the incidence of obstructive pulmonary emphysema is unknown, but if smoking is a cause, the disease should not be rare. When referring to emphysema, the advanced form is usually indicated, with striking respiratory embarrassment, but it is highly probable that the disease in milder form or in its incipient stages is overlooked because of the lack of serious respiratory symptoms and because no practicable screening procedure suitable for the detection of the disease on a wide scale has been hitherto available. The authors believe that the expirogram will fulfill this need.

Thirty-four patients with chronic pulmonary disease characteristic of obstructive emphysema were studied. Among the group were 28 males and 6 females, ranging in age from 50 to 81 years. The evidence presented indicates that in the New England area and in the age group over 50, smoking is the major cause of emphysema and that the disease is inflammatory rather than degenerative in nature. (Lowell, F. C., et al., Chronic Obstructive Pulmonary Emphysema - A Disease of Smokers: Ann. Int. Med., 45:268-274, August 1956)

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Sickle-Cell Anemia in Pregnancy

In the past 10 years, the number of reported cases of sickle-cell anemia in pregnancy has increased to such an extent that this condition is no longer a rarity. To date, 129 cases of sickle-cell disease in pregnant women have been reported. This paper reports nine additional cases of

sickle-cell anemia in pregnancy observed at Harlem Hospital with a complete review of the literature and a summary of current concepts of diagnosis and treatment.

Sickle-cell anemia, or disease, is a hereditary chronic disease of Negroes with protean manifestations involving virtually every system of the body. It is characterized by marked anemia, evidence of red blood cell destruction (jaundice and elevated icterus index), and sickle-shaped red blood cells. It has latent and acute phases, the acute phase being called the "crisis." Sickle-cell disease is to be differentiated from sicklemia or the sickle-cell trait in which there is no anemia or red blood cell destruction and which has no clinical significance.

Wide variations exist in the reported incidence of the sickle-cell trait among Negroes. In the United States, the incidence ranges between 7 and 14%, whereas in Africa, the frequency is as high as 20%. The incidence of sickle-cell disease varies from 0.2 to 1% with the ratio of sickle-cell disease to sickle-cell trait being between 1:9 and 1:71. Originally, this disease was supposedly found only among Negroes. There have been a number of reports, however, of both the trait and the disease in white people. The individuals involved were usually from one of the Mediterranean countries or Latin America, and the possibility of Negro ancestry cannot be excluded in some of these cases.

The sickle-cell trait generally does not appear until the fourth or fifth month of life. Usually, the disease first manifests itself in childhood, although rare cases in infancy and one in a newborn infant have been reported. The incidence decreases after adolescence and most patients die before reaching their fourth decade or shortly thereafter.

It is believed that sicklemia is transmitted by a single dominant gene according to Mendelian laws. Why the disease develops in some and not in others is not known.

From the various statistics, sickle-cell disease is known to be associated with high fetal wastage. Why this is so is not known. Labor is not affected by this disease, most of the deliveries being normal and spontaneous. Maternal infections (respiratory, genitourinary, and puerperal) are frequent, but they should not constitute too great a problem with the antibiotics which are now available. Toxemias of pregnancy occur in 10% of the cases—an incidence which is greater than normal, but not inordinately so.

The effect of pregnancy on sickle-cell disease is far more difficult to evaluate, partly because of a lack of comparative studies. It is easy to assume that pregnancy aggravates sickle-cell disease on the basis of the high maternal mortality rate and the fact that many cases are detected for the first time during pregnancy. On the other hand, many investigators believe that numerous patients with sickle-cell disease go through pregnancy with the disease in the latent phase, innocuous and undiagnosed. Also, one case has been reported in which the leg ulcers of a woman with sickle-cell disease

cleared up during pregnancy with recurrence following delivery; the sickle-cell disease actually ameliorated during the pregnancy.

Physicians will be in a better position to weigh the effect of pregnancy on sickle-cell disease when the diagnosis is made more frequently in asymptomatic patients, as well as in those in crisis. A comparison between groups of pregnant and nonpregnant women with sickle-cell disease over an equal period of time would also help in determining the relationship between these two conditions. For the present, concrete evidence that pregnancy exerts any specific deleterious effect on the course of sickle-cell disease is lacking.

During the prenatal period, weekly hematologic examinations should be performed, and vitamins, iron, and liver extract should be given. Cobalt has been used in a few cases with encouraging results. Transfusions are not indicated in the patient not in crisis unless the hemoglobin is less than 8 gm.

Should the patient go into crisis or develop a respiratory or genito-urinary infection, immediate hospitalization and treatment with antibiotics and transfusions are mandatory. These patients are notoriously prone to develop transfusion reactions and must be watched closely. ACTH and cortisone have been used in treating the crisis of sickle-cell disease with good results. Oxygen for dyspnea, and prophylactic digitalization for impending heart failure, are utilized.

Many authors advocate induction of labor when the fetus is viable, for fetal salvage. As yet, there is no definite evidence that this procedure has produced more live babies. At Harlem Hospital in the past, the patients have been allowed to deliver spontaneously. In a case near term with a "ripe" cervix or ruptured membranes, induction would probably be attempted.

Labor is managed along conventional obstetric lines. Oxygen should be given freely to these patients, and prophylactic low forceps delivery under pudendal block is the desirable method. Antibiotics are also given prophylactically at the onset of labor and are continued through the puerperium.

Cesarean section is reserved exclusively for obstetric indications and not for fetal salvage, as it might be utilized in a diabetic patient. Section could conceivably initiate a fatal crisis. Five sections have been performed in the past in patients with sickle-cell disease. The indication in four of the cases was cephalopelvic disproportion; in the other case, the indication was not clear. One of these patients succumbed postoperatively.

Fouche', Switzer, and Williamson are advocates of therapeutic abortion early in pregnancy, especially if the patient has a history of frequent crises. Their justification lies in the high fetal and maternal mortality rates and these figures are incontrovertible. Further support of this contention is the fact that none of the deaths so far reported occurred in the first trimester. The risk of such a procedure should, therefore, not be great.

On the other hand, Beacham and Beacham stated that sickle-cell disease per se is not an indication for therapeutic abortion. The difference of opinion is due to the fact, as noted in the report, that physicians do not know how

pregnancy affects sickle-cell disease, if at all. Once a pregnancy has occurred, it is reasoned that it should be allowed to continue, especially if the fetus is "valuable." The policy at Harlem Hospital is not to perform therapeutic abortions.

Sterilization has not been performed often in the past, but it will probably be done more frequently as more cases are recognized and as these patients go through repeated pregnancies. The high maternal mortality rate which increases with each pregnancy certainly justifies this procedure. In addition, Beacham and Beacham have made the point that these mothers seldom live long enough to raise their children. (Eisenstein, M. I., Posner, A. C., Friedman, S., Sickle-Cell Anemia in Pregnancy - A Review of the Literature with Additional Case Histories: Am. J. Obst. & Gynec., 72: 622-632, September 1956)

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Total Body Cooling of the Febrile Gravely Ill Patient

This application of general body cooling grew directly out of interest in hypothermia as a method of doing open intracardiac surgery. In fact, the first patient treated by the authors using this technique was a woman who had just undergone repair of an atrial septal defect under direct vision during hypothermia.

Because of associated mitral valve disease and mild congestive heart failure, this 29-year-old woman was considered a poor operative risk, but nonetheless, the atrial septal defect was repaired and she withstood the immediate consequences of the operation quite well. Approximately 6 hours after she had been rewarmed, however, her temperature began to climb and soon reached 104.2° F. rectally. With this, her condition deteriorated. Her peripheral pulses were imperceptible, her heart rate was 140, and her blood pressure fell to a level between 50 and 80, systolic. Only with continuously assisted respirations, employing a tracheotomy tube, could cyanosis be prevented. But this was not enough and her condition seemed to be terminal. At this point, she was wrapped in refrigerating blankets and the temperature rapidly lowered to 96° F. using the same apparatus that had been employed to cool her for the intracardiac operation a few hours earlier. There was a striking improvement in her clinical state.

For several days following, any rise in body temperature above 99° F. was accompanied by an exhausting respiratory effort and a rapid pulse rate. Therefore, her temperature was kept at a slightly subnormal level by intermittent surface cooling for 5 days. Her final recovery was excellent.

Since this gratifying experience, the authors have used general body cooling to treat 24 other gravely ill, hyperthermic patients. In a few cases,

there has been a striking improvement while a number of others may have been benefited—at least temporarily.

Mild general hypothermia used in this fashion is similar, at least in superficial respects, to the so-called "artificial hibernation" employed by Laborit and many other European physicians. The European authors have used a number of drugs mixed to make a "lytic cocktail" and then administered this mixture intravenously along with mild surface cooling as part of an anesthetic technique. Good results have been reported, but there has been little enthusiasm for the technique in this country as yet. American physicians apparently hold a skeptical attitude toward the theories of the method and the idea of using a mixture of several drugs at one time.

It is impossible, of course, to be certain that this treatment significantly benefited any of the patients. This was not a controlled experiment, and, furthermore, the patients were treated by other means, in addition to cooling, that seemed to have a reasonable chance of helping them. Perhaps other factors were more important than cooling among the patients who recovered. Evaluation of the method must be approached cautiously, but the authors are of the impression—if not the conviction—that some of the patients were helped. The technique has not been clearly harmful for any of them. Body cooling seemed to help all of the survivors and for a few it may have been of critical benefit. In addition, cooling appeared to benefit temporarily one half of the patients who died.

As the body temperature decreased, the pulse and respiratory rates fell, muscular activity lessened, and the relentless progress toward total exhaustion slowed or stopped. This help was not enough if the patient was burdened with too many threatening complications. Occasionally, the results of treatment with body cooling were striking, but not miraculous. Only one survived among five patients who had major complications which caused a high fever after major abdominal operations for cancer. These patients died with complications such as postoperative hemorrhage, peritonitis, intra-abdominal abscesses, and lung abscess. On the other hand, among patients burdened with merely one major illness causing a high fever, the results were better. For example, among the four patients in whom the fever was due to brain damage (three head injuries and one cerebrovascular accident), three survived.

This technique lowers the temperature of feverish patients effectively and keeps the temperature down without anesthesia and without much difficulty. The method is easier to use, more certain in its immediate effect, and more continuously effective over a period of hours or days than commonly used cooling procedures such as alcohol sponge baths, icebags, or aspirin. Two features, particularly, make it a better method of cooling than these other techniques. One is the refrigerating blanket which cools the entire bed and, consequently, a large skin area. With this large cooling surface, intense cooling is necessary only at first; after the temperature has been lowered,

the bed surface may be cool enough if it is merely kept at room temperature. The other important feature of the technique is the use of enough sedation to avoid shivering during the initial cooling period. For this purpose, chlorpromazine appears to be especially useful.

A convenient effective method for lowering the body temperature of febrile patients is described. This method employs a large cooling blanket placed beneath the patient and the use of enough sedation with chlorpromazine and phenobarbital sodium to prevent shivering.

Twenty-five gravely ill patients with temperatures above 103° F. were treated, thirteen of whom survived. All of the survivors and one half of those who succumbed appeared to be benefited by the cooling technique. (Lewis, F. J., et al., A Technique for Total Body Cooling of the Febrile Gravely Ill Patient: Surgery, 40: 465-470, September 1956)

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Fatal Fallacies

In driving, there is no substitute for self-reliance. Safety belts, special padding, and other mechanical features all help, but reliance on them is a fatal fallacy. Reliance on the other driver or pedestrian to follow the rules of the road to the letter is a fatal fallacy. And, by definition, a fatal fallacy is a mistaken belief that leads to disaster.

This is not to dismiss all the advances that have been made in alleviating the seriousness of accidents. Every one of these steps is a stride in the right direction. But it is the driver's mind harnessed to his reflexes, plus his body harnessed to his seat, which is going to produce fewer accidents. It is brainpower, not horsepower; the power to steer and brake, not power steering or power braking, which is the ultimate solution of the safety problem.

Again in 1955, there was repeated the fatal fallacy of safety by decree. While the President's official S-D Day served a worthwhile purpose in focusing attention on our distressing habits, it did not cause the slightest decrease in the day's casualties. With individuals, business, and all media of communication emphasizing safety, the nation's motorists and pedestrians went about their business as usual. And, as in 1954, S-D Day was followed by the most devastating Christmas weekend in history.

Stricter enforcement is a welcome trend, as it places serious practical difficulties in the path of the habitually careless driver. However, it would be a fatal fallacy to believe that punishment, any more than reward or appeal to the higher instincts of individuals, is the sole solution to a mounting accident rate.

Safety is more than a slogan. It is an attitude of mind and a way of life. And as the road of all virtues is strewn with temptations, so is the path of safety. We call them fatal fallacies. The following are a few of the deadliest:

Pitting speed of reflexes against the modern automobile's super-horsepower.

Feeling free to "pour it on" on the straightaway, no matter how clear the day, how dry the road, how straight or wide the highway.

Driving while intoxicated or weary in the vain hope that the homing instinct will assure safe arrival.

Reliance on built-in safety features to compensate for lack of care.

Believing, with the supreme confidence born of experience, that rules of the road are meant for beginners.

These are some of the fatal fallacies which caused grievous death and injury on the highways of America in 1955. More than 80% of all casualties occurred in accidents where there was some driving violation.

This leads to the inescapable conclusion that accidents do not "just happen." And to believe that avoidance in the past means immunity in the future is the most fatal fallacy of all. - The Travelers 1956 Book of Street and Highway Accident Data. (Editorial: Military Medicine, September 1956)

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Manpower Loss from Motor-Vehicle Accidents
Navy and Marine Corps: 1955
A Summary

It has been estimated that three Americans are injured every minute and three die every hour as a result of automobile accidents. The military establishment contributes to these injury and fatality rates. During the period of the Korean war, there were as many navymen and marines injured in motor-vehicle accidents as in battle.

1. In the Navy and Marine Corps, deaths from motor-vehicle accidents outnumber disease deaths by more than 2 to 1.
2. During calendar year 1955, 601 men of the naval forces died from injuries received in motor-vehicle accidents.
3. During this same year, an additional 389 men were invalided from the service out of a total of 7,782 injured in motor-vehicle accidents.
4. Each case remained on the sicklist 41 days on the average. Collectively, the 7,782 injured represented almost 320,000 days on the sicklist.
5. In addition to the irreplaceable losses of manpower, motor-vehicle accidents in 1955 will cost the Government more than 34 million dollars in medical expenses, pensions, survivor benefits, pay, allowances, et cetera.
6. Rates, despite the various programs utilized, increased in 1955:

Noneffective rate ..up 4%	Admission rate ..up 12%
Invaliding rate.....up 11%	Death rate.....up 29%

7. Admission rates for members of the Marine Corps were higher than rates for Navy personnel:

Marine Corps ..... 1,252.3 per 100,000
Navy ..... 764.3 per 100,000

8. Off-duty accidents were responsible for 88% of the injuries from motor-vehicle accidents.

9. More accidents occurred on Saturdays than on any other day of the week. Also, more injuries took place in the summer and fall months than in the other two seasons.

10. The admission rate for personnel aged 20-24 was higher than for any other age group. Persons aged 25-29 ranked second and those under 20, third.

11. Motorcycle accidents were not so often fatal as accidents involving other types of vehicles. While they accounted for 8% of the motor-vehicle injuries, they were responsible for only slightly over 3% of the deaths. However, persons injured in motorcycle accidents remained on the sick-list longer than those with injuries in accidents involving other types of vehicles.

12. The leading diagnoses on admission for motor-vehicle injuries were as follows: Fracture; wound, incised and lacerated; abrasion, contusion, and blister; and concussion of the brain.

(Manpower Loss from Motor-Vehicle Accidents: Statistics of Navy Medicine, 12: 4-12, September 1956)

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The Surgeon General's Symposium

The Surgeon General's Symposium will be held 23-24-25 January 1957. It is expected that all district medical officers, district dental officers, and staff medical and dental officers of all larger commands will be issued orders for attendance at this Symposium. (Asst. Chief, Pers. & Prof. Operations)

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Sixty-Third Annual Convention of the Association of Military Surgeons

The Association of Military Surgeons will hold their annual convention at Washington, D. C. on 12, 13, and 14 November 1956. This meeting will be devoted exclusively to subjects in military medicine and will afford an excellent opportunity for inactive Reserve Medical Department officers of the Armed Forces to be brought up to date on the latest developments in the Federal medical services.

Rear Admiral W. P. Dana MC USN, President of the Association, will open the meeting at 9 a.m., Monday, November 12, 1956, in the Presidential Ballroom of the Statler Hotel, by introducing the senior officers of the various Federal medical and health agencies. The scientific portion of the program, The Expanding Horizons of Military Medicine, will follow and continue through Wednesday, November 14.

The Chief of Naval Personnel has approved the awarding of retirement point credits to eligible inactive Naval Reserve Medical Department officers attending the convention. Appropriate duty orders are not required.

Reserve officers will be required to register by presenting themselves at the registration desk, reports of attendance will be forwarded to ROPRA (Reserve Officer Performance Recording Activity) and district commandants to insure proper accreditation.

Medical Department officers on active duty may be issued Authorization Orders in accordance with current instructions.

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Military Medicine Section - AMA

The Program Committee of the Section on Military Medicine of the American Medical Association will meet on 25 October 1956, to consider suitable papers for presentation before the Section at the Annual Meeting to be held in New York City, 3-7 June 1957. It is requested that all medical officers who are interested and who are considering the presentation of papers relative to any phase of Military Medicine, forward as soon as possible the suggested title and a brief abstract of the topic to be discussed to the Secretary of the Section.

All papers submitted for consideration must have a military medical aspect. It is the Committee's endeavor to present subjects and material not found on the programs of other sectional meetings and pertinent to those phases of medicine peculiar to the military or with which the military, as a matter of course, would be most familiar; for example, such topics which would reflect the best of the accomplishments in research, clinical investigation, disaster planning, civil defense, treatment of casualties, et cetera. The Committee desires to assure itself that:

1. The quality of the paper is such that it reflects credit on Military Medicine, points out how Military Medicine is advancing in its sphere of influence, and bestows prestige on those physicians who are serving their country in the Armed Forces.
2. The papers will serve to impress those in attendance that a career in Military Medicine does, indeed, offer a stimulating professional experience.

3. The contents of the papers are such that they would attract attention by their merit alone.

4. The titles are eye-catching as well as informative.

It is intended that as many as possible of the papers presented before the Section be accepted for publication in the Journal of the AMA. Therefore, the papers selected for presentation must contain, establish, or present:

1. New facts, modes of practice, or principles of value.
2. Results of well devised original experimental research.
3. A complete review of the facts on any particular subject which will enable the writer to deduce conclusions of importance.

Papers which can be presented adequately without the use of slides are preferred, because slides are time-consuming and difficult to present effectively to large audiences.

To enable the Committee to evaluate fairly the content of the proposed papers, it is requested that the brief abstract present the highlights of the topic to be discussed. This abstract is to be used for comparing the contents of the different papers and is not the abstract to be published by the AMA. The latter will be requested from those authors whose papers are selected for the program.

Section Secretary: Captain Cecil L. Andrews MC USN
Secretary, Military Medicine Section, AMA
Bureau of Medicine and Surgery (Code 31)
Navy Department
Washington 25, D. C.

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From the Note Book

1. Rear Admiral B. W. Hogan, Surgeon General of the Navy, will be the principal speaker at the annual meeting of the American Federation of the Physically Handicapped. The meeting will include ceremonies which will launch the 12 anniversary of "National Employ the Physically Handicapped Week," October 7-13, 1956. (TIO, BuMed)

2. Rear Admiral R. W. Malone DC USN, Assistant Chief for Dentistry and Chief, Dental Division, headed the group of four Dental officers who represented the Dental Division at the 1956 Session of the American Dental Association. Captains B. H. Faubion, A. R. Frechette, and C. M. Wheeler, DC USN, were the other members. (TIO, BuMed)

3. Captain N. L Barr, MC USN, and associates from project RAM (Research Aviation Medicine) participated in and represented the United States at the Berlin International Scientific Exposition, September 13-30, 1956. (TIO, BuMed)

4. Four Red Cross and Red Crescent Society members from the Union of Soviet Socialist Republics visited the U.S. Naval Hospital, NNMC, Bethesda, Md., September 17, 1956. The group toured the Hospital and were shown the facilities available for Red Cross work. (TIO, BuMed)

5. During the Labor Day weekend holiday period, the Bureau of Medicine and Surgery has reported that not a single life was lost in the U.S. Marine Corps during the entire period, and that only three Navy men died, as a result of injuries incurred due to automobile accidents. (TIO, BuMed)

6. The Bureau of Medicine and Surgery's Annual Conference of Medical Department Finance and Administrative Officers will not be held this year because of the implementation of a new concept in financial management within Naval Hospitals. A committee has been appointed and plans are being made to conduct the next conference in April 1957. (TIO, BuMed)

7. A Seminar for Commanding Officers of Naval Reserve Dental Companies will be held in Washington, D.C., for one week, October 29 - November 2, 1956. The Seminar is designed to provide indoctrination and orientation in the organization, administration, and operation of the Naval Dental Service from the Bureau level, and to acquaint the trainee with the current concepts and trends affecting the Naval Reserve Dental Program. (TIO, BuMed)

8. On September 28 and 29, 1956, Dr. Jui-san Chen, Instructor and Head of the Clinical Laboratory at the College of Medicine of the National Taiwan University in Taipei, Taiwan, visited the Naval Medical School, NNMC, Bethesda, Md. While visiting the United States, Dr. Chen will observe the organization and management of various civilian and military medical installations of the United States. (TIO, BuMed)

9. Public Health Service scientists have now devised a way of measuring, in animals, the velocity with which blood is ejected at a given instant from the heart into the aorta. This advance, which will soon be applied to humans, may make it possible for scientists to calculate the power output of the heart and from this to judge the reserve power of the hearts of both normal persons and heart patients.

This information will be of great value to physicians and surgeons in determining the physical abilities and limitations of heart patients and in judging the risks for particular patients of stressful experiences such as surgical operations. (PHS, HEW)

10. The National Bureau of Standards has developed an instrument for determining the accuracy and dimensional stability of artificial dentures. A pantographic type of comparator, the instrument measures the surface contours of two dental impressions or dentures and indicates dimensional differences to an accuracy of $\pm$ 0.002 in. or better. The comparator can also be used to measure dimensions of both hard and elastic impressions and models of oral structures. Primarily a research tool, the instrument was developed by CDR N. W. Rupp, NBS guest worker from the U.S. Navy; M.E. Lawson, Jr. American Dental Association Research Associate at the Bureau; and George Dickson and W. T. Sweeney of the Bureau staff. (NBS)

11. Adult chickenpox is usually considered to be a mild disease, as is its childhood counterpart. However, it often presents as a severe illness and one of the more frequent serious complications is pneumonia caused by the varicella virus. This condition is almost exclusively encountered in adults. It manifests itself early in the course of the disease and is associated with cough, bloody sputum, severe respiratory distress, and cyanosis. Roentgenographically, it is characterized by a diffuse finely nodular pulmonary infiltration. (Am. J. Roentgenol., September 1956; M.E. Southard, M.D.)

12. Twelve cases of intussusception in adults are reported. A review of 122 cases reported in the British and American literature is presented and an analysis of the history, diagnosis, pathology, and management of the condition is made with particular reference to secondary intussusception. (Surg. Gynec. & Obst., September 1956; A. Roper, London)

13. This article presents a brief review of hernias of all types, with emphasis on the most frequent type, inguinal, a discussion of reasons for recurrence and presentation of methods of repair of diaphragmatic and ventral hernia. (J. Internat. Coll. Surgeons, August 1956; L. W. Long, M.D.)

14. One death and eight near fatalities following the use of chlorpromazine in conjunction with spinal, epidural, and celiac plexus block are reported in Surgery, September 1956; D.C. Moore, M.D., L.O. Bridenbaugh, M.D.)

15. This report reviews briefly some of the physiologic factors in hypophysectomized patients and presents the authors' experience in the management of patients during these operations. (Anesthesiology, September - October, 1956; P.P. Tung, M.D., et al.)

16. Wide variations in death rates from coronary heart disease exist in different parts of the United States, with rates twice as high in some states as in others. Further studies may lead to better understanding of the causes of heart disease. (PHS, HEW)

NOTES

PERSONNEL — PROFESSIONAL

Availability and Utilization of Technical Specialists in the Hospital Corps

In military medicine, improvements in diagnostic, treatment, and rehabilitation services necessitate changes in technique and equipment which tend to become more and more diversified and complex. To keep abreast of these evolutionary changes, continuous training and retraining of Hospital Corpsmen is necessary, particularly as pertains to training in the technical specialties.

The technical training program for Hospital Corpsmen is designed to provide Medical Department officers with an adequate number of qualified technical assistants. This policy is designed to utilize Hospital Corpsmen in training billets the minimum time necessary to insure maximum effective utilization in operational billets.

For purposes of identification, primarily useful in distribution and detail, Navy Enlisted Classification numbers are assigned to technical specialists: Example: John (n) Doe, 123 45 67 (HM-8412/8404) HM2 USN identifies the corpsman as a Clinical Laboratory Technician and a Medical Field Service Technician. It is essential that the NEC number (s) be accurate and be kept current.

Every Hospital Corps technician on board is charged against the allowance for that particular technical specialty. Thus, if a technician is no longer qualified in his designated specialty and is not assigned duty within his specialty, he is, nevertheless, counted against the command allowance. In such cases, a request should be made to the Bureau of Medicine and Surgery for appropriate change in the NEC number. For example, in the event an Operating Room Technician develops a chronic dermatitis of the hands which precludes his working in the operating room, a request should be made for the NEC number (HM-8483) to be removed from his record. If at a later date the dermatitis clears up and the corpsman can again be assigned duties of his specialty, a request for redesignation as an ORT (HM-8483) should be made.

Current enlisted allowances for technicians are used as a basis for determining training requirements; therefore, these allowances should reflect actual requirements.

Technical specialists currently in very short supply are Clinical Laboratory Technicians (HM-8412), X-Ray Technicians (HM-8452), Neuropsychiatry Technicians (HM-8485), Occupational Therapy Technicians (HM-8487), and Physical Therapy Technicians (HM-8494).

Deficiencies in available technicians will be corrected as soon as possible through acceleration of the training program. Individual commands

can materially contribute to this program by encouraging qualified Hospital Corpsmen to request such training. Advance training quotas have been issued to Naval Districts, River Commands, CNATRA and Service Force Commands. Until further notice, all commands are encouraged to solicit volunteers qualified for training as technicians and report them to the appropriate district or administrative command in accordance with Article 23-144, Manual of the Medical Department.

Until such time as requirements for technicians can be filled, existing shortages will be equitably prorated. Assignment of technicians to duty in their specialty to the maximum extent compatible with over all command efficiency and utilization of nonspecialists as strikers in special depratments will tend to minimize the effects of the current shortage. (PersDiv, BuMed)

Dependents Medical Care Division

The Bureau of Medicine and Surgery has recently established, within the Bureau, organization, a "Dependents Medical Care Division." Captain Guy E. Stahr MC USN is the Director of the new Division. Captain Stahr brings to this assignment the experience gained from a long and distinguished career in the Navy Medical Corps. Previous assignments include command of the Naval Hospital, Yokosuka, Japan; the Naval Hospital, Camp Pendleton; and the Naval Medical School, National Naval Medical Center, Bethesda, Md.

The function of the new Division is administration of dependent medical care in relation to recently enacted Public Law 569, 84th Congress, Dependents Medical Care Act; and liaison with other Government and civilian departments and agencies. (ProfDiv, BuMed)

Draft Call # 27

Doctors coming on active duty in compliance with Draft Call # 27 will report in October 1956. It is anticipated that approximately 240 physicians will receive assignments. A substantial number of this group have had some specialty training. (ProfDiv, BuMed)

Utilization of Medical Officers

The Chief of Naval Personnel has promulgated BuPers Instruction 1301.26 dated 6 September 1956 designed to improve the utilization of professional services of medical officers assigned to certain classes of naval vessels. These instructions will assign medical officers in AGB, AVP, ARG, AVS, AKA, and DES DIV and DES RON staffs additional duty at a hospital or medical department of a naval activity in the same metropolitan area as the home port of the ship or staff concerned, or the port in which the ship may be normally operating. Medical officers attached to types of

vessels or units not included in the foregoing, may be issued full or part-time temporary additional duty orders by Commanders in Chief or Senior Officers Present, in coordination with District Commandants, to augment medical personnel in local naval hospitals, station hospitals, or dispensaries to assist in dependent medical care.

This instruction replaces and expands the policy contained in AlNav 16-54. (ProfDiv, BuMed)

Visiting Physicians

A recent BuMed Instruction authorizes the employment of civilian specialists on a part-time basis to augment the professional staffs of facilities under BuMed-management control. It is the Bureau's intention that these "visiting physicians" will be used primarily in outpatient clinics or in such specialties as radiology, pathology, et cetera, where the Naval Service is in short supply.

The instruction lists three methods for obtaining the services of "visiting physicians" but indicates that Civil Service appointment should be made wherever practicable. (BuMed Instruction 12000.2 of 31 August 1956)

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National Naval Medical Center Reunion

A reunion of all officers who were attached to the National Naval Medical Center during the period, 7 December 1941 to 15 August 1945, is being planned. This reunion will be held at the Center, 10-11 November 1956. All officers who are interested in attending are requested to contact the Reunion Committee, 4002 Redden Road, Drexel Hill, Philadelphia, Pa.

The Surgeon General has expressed his interest in assisting the Committee in planning the reunion. Full details will be supplied by the Committee.

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BUMED NOTICE 6120

10 September 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Annual physical examination of officers

Ref: (a) Art. 15-45, ManMed
(b) Art. 15-71, ManMed
(c) BuMedInst 6120.1 of 29 July 1952, Subj: Physical examinations, annual

This notice emphasizes the importance of the annual physical examination as a means for detecting disease processes in their incipiency and instituting corrective measures.

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BUMED INSTRUCTION 6230.8A 13 September 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Poliomyelitis vaccine, Salk; use of

This instruction promulgates revised instructions for the procurement and use of poliomyelitis vaccine. BuMed Instruction 6230.8 and supplements 1 and 2 are canceled.

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BUMED INSTRUCTION 12000.3 17 September 1956

From: Chief, Bureau of Medicine and Surgery
To: All BuMed Management Control Activities

Subj: Civilian personnel informational releases and instructions; dissemination of

Encl: (1) BuMed Instruction 12075.1B

This instruction informs addressees of the adoption of a system of dissemination of civilian personnel policy statements, employee informational releases, and related material as a service to BuMed management control activities.

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BUMED INSTRUCTION 6820.4D 18 September 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Professional medical, dental, and technical books; requirements for and procurement of

Ref: (a) BuMedInst 5215.4A of 11 May 1955; Subj: Manual of the Medical Department, U.S. Navy (NavMed P-117)
(b) SecNavInst 7110.2 (Notal) of 29 Sep 1955; Subj: Financial responsibility for maintenance and operation of medical and dental facilities

This instruction informs addressees of the procedure to be followed in the procurement of professional medical, dental, and technical books, and to list minimal requirements for reference libraries. BuMed Instructions 6820.3A (Notal), 6820.4C, 6820.5A (Notal), and 6820.7 (Notal) are canceled.

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BUMED INSTRUCTION 6710.34 19 September 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Defective medical and dental material; authority for disposition of

Ref: (a) Medical and Dental Materiel Bulletin, Edition No. 70 of 1 Sep 1956
(b) Art. 25-21 ManMed

This instruction provides authority for the disposal of defective material listed in paragraph IV of reference (a).

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BUMED NOTICE 6700 19 September 1956

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: CH-1 to BuMed Instruction 6700.5A, Subj: Reserve Fleets; medical and dental departments in vessels of

Encl: (1) Subject change

This notice modifies subparagraph 5b(9) of enclosure (1) of BuMed Instruction 6700.5A and removes enclosure (3) of the Instruction.

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SUBMARINE MEDICINE SECTION

Diving Casualty Case Studies

(This series of case studies, published in the Medical News Letter of 24 August and 7 September 1956, is concluded in this issue.)

Case No. 9

This diver was being given the pressure test followed by the oxygen tolerance test. He was compressed in a chamber to a simulated depth of 112 feet and after 6 minutes of bottom time was brought to 50 feet and started breathing oxygen. After 15 minutes breathing oxygen at this depth, he developed a generalized convulsion. "The man required restraint as he appeared manic." Comment: This man had been doing shallow water diving and scuba diving off and on for 10 years. Needless to say, he was disqualified for diving. Oxygen convulsions are generalized Jacksonian in type. There is complete recovery if the patient is protected from injuring himself. The patient may have some warning of the approaching convulsion such as muscle twitching or visual and acoustic aura.

Case No. 10

This patient was being given the tests noted in previous case. After 22 minutes breathing oxygen at 50 feet, he developed a convulsive seizure. Prompt spontaneous recovery when oxygen mask was removed. Comment: The treatment for an oxygen convulsion as indicated here is to reduce the oxygen partial pressure. In the test, this is done by removing the mask and allowing the patient to breathe air. It could be done by reducing the pressure. In diving practice, if the diver develops suspicious signs or symptoms during the last portion of his 50-foot stop he may be brought to the 40-foot stop and any time left over added to the 40-foot stop time.

Case No. 11

The same test procedure was being used as above noted except the diver was at 60 feet as prescribed in the Manual. After 21 minutes, he noted

twitching of his lower lip but did not mention it. When the chamber was vented he experienced severe pain in his ears but still said nothing. When the chamber was vented two minutes later, after 23 minutes of oxygen, he had a generalized clonic convulsion lasting about 2 minutes. He did not void. He did not have any postconvulsive depression. Disqualified. Comment: Failure to recognize and report the prodromal signs and symptoms is a common reason why oxygen convulsions occur. In this instance, the test was being given at the proper prescribed depth. Tolerance to oxygen varies so widely that it is not doing the subject a favor to trim this test. It may result in fewer convulsions at the place where the test is given, but it means shortchanging the man's safety at a later date.

Case No. 12

Candidate was taken to 60 feet for an oxygen tolerance test. After 27 minutes on oxygen at 60 feet, the patient convulsed for 50 seconds. Immediately afterwards the patient was temporarily confused and markedly fatigued. Recovery was gradual and complete. Comment: These four cases should convince anyone that the oxygen tolerance test should not be cut short or trimmed to favor the candidate. Also, any scuba swimmers should read these reports again, just before they decide to fill their tanks with oxygen. There are some special types of scuba designed for oxygen use. A couple of case studies from these have been discussed before in this series. A depth limitation of 30 feet or thereabouts is a reasonably safe depth range for oxygen filled scuba. This diving business is not for amateurs.

Any Medical officers interested in the course in deep sea diving for medical officers (2 months), or the course in submarine medicine (6 months), which includes deep sea diving, are invited to write to Director, Submarine Medicine Division, Bureau of Medicine and Surgery, for information.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda, Md., giving full name, rank, corps, and old and new addresses.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

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DENTAL SECTION

An Open Letter from the Chief of the Dental Division to All Dental Personnel

This letter is to express my sincere appreciation to all of you who, on 22 August, so wholeheartedly supported the commemoration of the Forty-Fourth Anniversary of the founding of the U.S. Navy Dental Corps. Many excellent reports of your successful affairs have reached this Bureau through copies of ships and stations papers. The news articles in these papers were uniformly in good taste and cannot but result in enhanced public relations for our profession and for the Navy. I am confident that the birthday celebrations which you held have made significant contributions to the solidarity and esprit de corps of our organization.

It has been the custom of the Chief of the Dental Division in the past few years to send individual letters of appreciation to the heads of dental facilities who sponsored commemorative activities on the anniversary of the founding of the Dental Corps. I am happy to report to you that the ceremonies, receptions, news articles, and birthday cakes were so numerous this year that individual recognition is not practicable. I am proud that your enthusiastic support in recognizing the anniversary of our Corps has made it necessary for me to use an open letter to send this "WELL DONE."

/s/ R. W. MALONE

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Operation Build-Up

The following Dental officers have recently been appointed in the Regular Navy Dental Corps:

CDR Charles W. Folkers
U.S. NARF - Naval Air Station
Birmingham, Ala.

CDR Clyde R. Parks
Naval Ammunition Depot
Hawthorne, Nev.

CDR Robert T. Salandi
Naval Air Station
New Orleans, La.

CDR Ernest W. Small
Naval Air Station
Denver, Colo.

CDR Winthrop F. Smith
USS ALBANY (CA-123)
c/o Fleet Post Office
New York N. Y.

CDR Ralph H. Stowell
Norfolk Naval Shipyard
Portsmouth, Va.

LCDR Estel D. K. Ikenberry
Naval Dental Clinic
Marine Corps Base
Camp Pendleton, Calif.

LCDR "J" Weir Mitchell
318 West 9th Street
Rochester, Ind.

LT James E. Carthay
79 Line Oak Avenue
Fairfax, Calif.

LT Herbert C. Deaton
Naval Air Station
Memphis, Tenn.

LT Harris J. Keene
Aircraft, FMF, Pacific
Marine Corps Air Station
El Toro (Santa Ana)
Calif.

LT Wallace D. Loo
Norfolk Naval Shipyard
Portsmouth, Va.

LT James H. Stanley
Marine Corps Supply Center
Barstow, Calif.

Dr. Joseph E. Deitch
615 Bennett Street
Montoursville, Penna.

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Notice to Officers Concerning NavMed 1323

Fleet, Force, District, and Staff Dental officers have been forwarding two copies of the combined Dental Personnel Report (NavMed 1323) to the Bureau of Medicine and Surgery. Only the original of the NavMed Form 1323 is required by this Bureau.

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Captain Wyckoff to Speak at Symposium

Captain Robert D. Wyckoff DC USN, Head, Standards and Training Sections, Dental Division, Bureau of Medicine and Surgery, will present a talk on Identification of Casualties by Means of the Teeth, at the combined Armed Forces Medical-Dental Military Symposium conducted by the Ninth Naval District at the U. S. Naval Hospital, Great Lakes, Ill., 27 September, 1956

MEDICAL RESERVE SECTION

Courses Available to Inactive Reserve Officers

The twenty-fifth presentation of the medical aspects of Special Weapons and Radioactive Isotopes is scheduled to convene at the U. S. Navy Medical School, National Naval Medical Center, Bethesda, Md., 15 October through 26 October 1956. The First, Third, Fourth, Fifth, Sixth, Eighth, and Ninth Naval Districts and Chief of Naval Air Reserve Training have been assigned quotas for this course. The course is designed for officers of all corps of the Medical Department, therefore, all Naval Reserve MD officer personnel are eligible. The first week will be devoted to the medical aspects of Special Weapons and Radioactive Isotopes with particular reference to personnel casualty in atomic explosion. In the second week, professional and adminis trative topics with concern to military medicine will be presented, including a symposium on the Reserve medical program.

Officers should be ordered to report to the Commanding Officer, U.S. Naval Medical School, NNMC, Bethesda, Md., prior to 1600, Sunday, 14 October 1956; officers will be detached on Saturday morning 27 October. It is requested that an advance copy of orders issued for attendance in this course be forwarded to the Commanding Officer, Naval Medical School, at the earliest practicable date.

BOQ facilities are limited and are available on a first-come first-served basis. Messing facilities are available. Security clearance is not required.

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Correspondence Courses

Two excellent correspondence courses entitled: Manual of the Medical Department, Part I, NavPers 10708; and Manual of the Medical Department, Part II, NavPers 10709, are available to eligible Regular and Reserve officer and enlisted personnel of the Medical Department.

Manual of the Medical Department - Part I

This course is designed to allow Medical Department personnel to familiarize themselves with the functions of administration, organization, and management of facilities under the cognizance of the Bureau of Medicine and Surgery.

In matters of administration, the Medical Department is guided by Navy Regulations, current Bureau of Medicine and Surgery directives, and the

Manual of the Medical Department, therefore, certain chapters of the Manual of the Medical Department have been included as the principal text for the course. The material embraces authoritative methods and procedures and discussions of approved essential organizational structure of the MD components from the Bureau of Medicine and Surgery, the various field agencies in all areas of activities, through the regional and Naval District medical staff to the MD organization in ship and on shore stations.

Completion of this course will enable the enrollee to acquire essential knowledge of the significant functions of the Medical Department in its relation to the Naval Establishment ashore and afloat in its far-flung activities and to increase his or her efficiency.

Consisting of ten objective question type assignments, the course is evaluated at 24 Naval Reserve promotion and nondisability retirement points. Completion letters are prepared upon satisfactory completion of assignments as follows: 1 through 5 - 12 points; 6 through 10 - 12 points.

Manual of the Medical Department - Part II

This course is designed to acquaint MD personnel with procedures that must be followed in performing professional and administrative functions.

The course is based on Army Regulations 40-115, which establishes physical and mental standards for induction and enlistment to be used by the Armed Services; and on chapters 15, 23, 24, 25, and Appendix of the Manual of the Medical Department, 1952 edition: physical standards, methods of procedure in conducting physical examinations; physical profiling required for original appointment and promotion to commissioned rank; appointment to the Naval Academy; enlistments and inductions in the Navy and Marine Corps. Included are the necessary criteria concerning the use of forms and reports for recording physical examination findings. Pertinent information relating to reports, forms, and records requirements, and fiscal and property management procedures is covered by chapters 23, 24, and 25, Manual of the Medical Department. Sample copies of selected DD, NavCompt, NavExos, PHS, NavMed, and Standard Forms are included for information. Appendix A, Treaties and Conventions, delineates the responsibilities of personnel of MD in relation to international treaties and conventions adopted by the U.S. Government, including the handling of sick or wounded personnel and war prisoners on land and sea.

Consisting of eight objective question type assignments, the course is evaluated at 18 Naval Reserve promotion and nondisability retirement points. Completion letters are prepared upon satisfactory completion of assignments as follows: 1 through 5 - 12 points; 6 through 8 - 6 points.

Applications for the foregoing courses should be submitted on form NavPers 992 (Rev 10-54) and forwarded via appropriate official channels to the Commanding Officer, U.S. Naval Medical School, Correspondence Training Division, National Naval Medical Center, Bethesda 14, Md.

PREVENTIVE MEDICINE SECTION

Special Poliomyelitis Vaccine Requirement

The request was recently made that all Americans have two doses of poliomyelitis vaccine completed at least one week before entering Pakistan. This request, originating with American personnel located in Pakistan, is a result of a recent outbreak of the disease in the American colony. Agencies, originating travel orders for Americans to Pakistan, have been alerted and will include with the orders a statement as to the desirability of obtaining the vaccine. Medical officers should be alert to this requirement and make every effort to arrange for completion of the two-dose series prior to the traveler's departure, giving at least the first dose if time does not permit both. There are no age restrictions.

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Prevention of Human Rabies

The history, development, and current concepts of the prevention of human rabies were discussed in three articles which appeared in the Medical News Letter: (1) Recommended Treatment for Potential Rabies in the May 2 1952 issue; (2) The Use of Phenolized Rabies Vaccine in Texas in the July 22, 1955 issue; and (3) Prevention of Human Rabies, also in the July 22, 1955 issue.

Continuing queries from the field concerning the problems encountered indicate that additional information, including a statement of policy, is desired. Although current laboratory investigations hold promise of a less severe immunization schedule with vaccines which are unlikely to produce untoward reactions, as yet there is no significant change in the recommendations as published in the World Health Organization Technical Report Series No. 28, Expert Committee on Rabies, November 1950, and reproduced in above-mentioned article number (1). Table 1, on page 10 of the original report was somewhat revised in form in 1953 by the Special Committee on Rabies, World Health Organization, and is reproduced herewith.

It should be noted that, as aforementioned article number (3) reported, the Armed Forces Epidemiological Board has made a recommendation to the Armed Forces as follows:

"That hyperimmune antirabies serum be employed as a routine in conjunction with rabies vaccine in the prophylaxis of rabies among military personnel and their dependents. That in severe head injuries, the antiserum should be repeated on the fourth day."

These recommendations are accepted as being authoritative and are presented as such, but as a matter of policy the decision to employ serum or vaccine in each particular case must remain with the medical officer. Numerous factors relating to such decisions preclude quantitative measure for each case and no reasonable formula for solving the problem has been advanced.

There should be no indecision in cases of individuals who were bitten by a dog known, or later proved, to be rabid. Likewise, there is probably very little problem when there is reasonable suspicion of rabies as evidenced by abnormal behavior, abnormal health, or abnormal death of the dog, even though laboratory confirmation is lacking. The most difficult problem is to decide the proper course of action when a person—particularly a child—has been bitten by a dog which is not subsequently available for observation.

The following pertinent points are enumerated as relevant to the medical officer's appraisal of the need for vaccine in any given case. These items should be given due consideration in each case before judgment is rendered:

1. The prevalence of rabies in the area is relative to the risk of exposure; however, rabies in wild animals may be silent and a bite by any wild animal is highly suspect.
2. In the case of a dog bite, a proper record of previous antirabies immunization of the dog should be taken into consideration.
3. Whether or not the dog bite was provoked has been mentioned in the literature as significant to the dog's behavior (if such information is available). One should be cautious of such histories, however, as some persons may be reluctant to admit provocation.
4. It has been reported that only 42 to 50% of rabid dogs are capable of transmitting the infection by bite. It is known that human infection with rabies is 100% fatal. Therefore, if one is bitten by a rabid dog and not treated, there is a 50-50 chance of his dying.
5. On the average, laboratory analysis proves only 60% of all rabid specimens by the presence of Negri bodies; and only an additional 10 or 15% is proved by virus isolation and animal passage. The remaining 25 to 30% can be identified only by clinical findings or by equivocal laboratory findings.
6. The Pasteur Institute reports that "Neuroparalytic Accidents," 1934 to 1954, occurred about once in every 23,000 persons vaccinated, with a 25% mortality of those so afflicted. However, reports in the United States range from 1/2,025 to 1/8,500. Other problems of sensitivity are

RABIES

INDICATIONS FOR SPECIFIC POST-EXPOSURE TREATMENT

Nature of Exposure	Condition of Animal: At time of exposure	During observation period of 10 days	Recommended Treatment
I. No lesions Indirect contact only	Rabid	-	None *
II. Licks			
1. Unabraded skin	Rabid	-	None *
2. Abraded skin and abraded or unabraded mucosa	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animal
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately. Stop treatment if animal is normal on 5th day after exposure**
	(d) Rabid, escaped, killed or unknown	-	Start vaccine immediately
III. Bites			
1. Simple exposure	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animal
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately. Stop treatment if animal is normal on 5th day after exposure**
	(d) Rabid, escaped, killed or unknown; or any bite by wolf, jackal, fox or other wild animal	-	Start vaccine immediately
2. Severe exposure (Multiple; or face, head or neck bites)	(a) Healthy	Healthy	Hyperimmune serum immediately. No vaccine as long as animal remains normal
	(b) Healthy	Clinical signs of rabies or proven rabid	As in III, 2, (a), but start vaccine at first sign of rabies
	(c) Signs suggestive of rabies	Healthy	Hyperimmune serum immediately, followed by vaccine. Vaccine may be stopped if animal is normal on 5th day after exposure.
	(d) Rabid, escaped, killed or unknown. Any bite by wild animal	-	Hyperimmune serum immediately, followed by vaccine

Hyperimmune serum to be effective must be given within 72 hours of exposure.
These indications apply equally well whether or not the biting animal has been previously vaccinated.

* Start vaccine immediately in young children and patients where a reliable history cannot be obtained.
** Alternative treatment would be to give hyperimmune serum and not start vaccine as long as animal remained normal.

Suggestions of Special Committee on Rabies, World Health Organization 1953.

well recognized and produce serious difficulties in the management of prophylactic regimens.

One further measure deserves special mention: many persons of substantial experience feel that the safe procedure of thorough wound cleansing with 1% Zephyran and 20% soft soap in liberal quantities, as soon as possible, is highly effective in preventing the transmission of the viruses to man.

The primary line of defense in rabies control still consists of the barrier of immune dogs and cats between the infected wild animal reservoir in most countries and the universally susceptible human being.

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Food Hygiene

The importance of heating and drying foodstuffs to prevent spoilage and to preserve food values was recognized by man long before he understood the bactericidal and bacteriostatic action of these processes. With the passage of time, advances have been made and processes of preservation, such as sterilization, pasteurization, and freezing, have been developed. Nevertheless, the vast amount of ill health and human suffering resulting from the consumption of infected and contaminated food still remains a public health problem of worldwide importance. While it is manifestly impossible to establish uniform sanitation habits applicable to all countries, with their varied cultural patterns and customs, it is possible to establish certain general principles of food hygiene which could be adapted to national needs by public health authorities.

The task of formulating these general principles is undertaken in the fourth report of the Expert Committee on Environmental Sanitation of the World Health Organization. In addition, the problems of food hygiene peculiar to various areas of the world are reviewed and guidance for the planning of food-hygiene programs in areas at different stages of development is given.

Principles in the Control of Disease-Carrying Foods

Many foods may be the vehicle of disease and the report discusses in some detail the more important, i. e., milk and milk products, meat, fish (including shellfish), and vegetables and fruits commonly eaten raw.

Milk and milk products, owing to their importance in the diet of man and to their disease-conveying potentialities, should receive strict attention in all food-hygiene programs. Sterilization and pasteurization, while affording a measure of protection, must not be relied on alone. Equally important aspects are the health of the live animal and the hygiene of production and subsequent handling. It is recognized in the report that in underdeveloped countries the general adoption of the processes of controlled heat treatment of

milk may present difficulties of an economic, administrative, and technical nature; but it is recommended that these processes should be carried out as soon as possible.

Meat that is freshly cooked is rarely implicated in outbreaks of food poisoning in highly developed countries, whereas the reverse appears to be the case in underdeveloped regions. Public health authorities, working in cooperation with veterinary officers, should insure the closest supervision of all meat supplies including inspection at the point of slaughter and at all stages leading up to delivery to the consumer. Abattoirs should be properly designed and constructed and provided with adequate facilities.

The feeding of pigs with uncooked garbage is perhaps the most important link in the chain of trichinosis infection and is a vulnerable point on which the sanitarian can concentrate his control efforts.

Statistics indicate that processed and made-up meat is responsible for the majority of food-poisoning outbreaks in certain highly developed countries and that special precautions are, therefore, necessary in meat-processing plants. It is of interest to note that the method of canning hams by the pasteurizing process is considered to be undesirable; if permitted, the cans should bear clear instructions regarding their storage.

Poultry should be slaughtered at special centers, especially if, as the report recommends, evisceration is carried out soon after slaughter.

Antibiotics and hormone preparations are sometimes used in the feeding of poultry with possible public health implications. The results of research in this field are awaited with interest.

Control of eggs should include all kinds of eggs offered for sale. Clean production methods, however, should not include the washing of eggs as this removes a layer of protective albumin. Proper control should be exercised over the manufacture of powdered dried eggs, and an upper limit for total bacteria count per gram should be established.

Fish should be inspected at the ports or at the inland distribution centers and markets, and control should extend throughout the line of distribution until it reaches the consumer. Shellfish-growing areas should be properly supervised especially where the beds are subject to sewage pollution. Outbreaks of typhoid fever and other forms of salmonellosis have resulted from the consumption of contaminated shellfish. In some areas, fish is buried for a few days or allowed partially to decompose before salting to suit local tastes as to color, flavor, and texture. Consumption of such fish has resulted in salmonella and staphylococcal infections.

Vegetables and fruits that are offered to the consumer without having been washed or treated with an effective germicide present a special danger. Special measures of control are necessary where sprayed sewage or sewage effluent and toxic insecticides are used to improve the growth of vegetables and fruit. The use of weak chemical solutions such as potassium permanganate for disinfecting is ineffective and should be strongly discouraged. However, a solution of chloromelamine with wetting agent added and buffered

to pH 3.8 has been found to be effective in destroying bacteria and cysts of Entamoeba histolytica on leafy vegetables.

In addition to these observations on, and recommendations for, the hygienic protection of foods particularly susceptible to contamination, the report also stresses the importance of laboratory control:

> "Following inspection to enforce compliance with legal requirements, the collection and laboratory examination of specimens of products is most valuable. It is recommended that all unsatisfactory results reported by the laboratory be followed up immediately to insure compliance with legal standards."

Problems in Food-Handling Procedures

Most foodstuffs will eventually be processed or stored before reaching the consumer; the report reveals some interesting but improper and danger-out procedures. For instance, in certain northern areas the pasteurization of milk is discontinued during the colder seasons when spoilage is not a serious problem; elsewhere, lead shot is introduced into the gullets of poultry to increase the weight which brings in the element of fraud and the hazard of lead poisoning; in other areas, canned hams are only partially preserved in an effort to produce a certain flavor; moist foods such as fish are wrapped in newspaper and contamination ensues from the colored inks; and, in the tropics, it is customary to throw a handful of straw into the top of filled milk cans to prevent splashing during transportation.

Contamination of food during serving presents the same problem of improper handling procedures; in view of the wide range of possible situations, it is necessary to establish food hygiene techniques which are adaptable to different conditions.

The principles of food hygiene in commercial and communal feeding are the same as in any other type of food handling, but they need to be applied with particular care because of the special risks involved as the report emphasizes:

> "One careless food handler or one human carrier of disease preparing food at home will jeopardize the health of only a small number of persons, mainly members of the family. When one such person works in the kitchen of a restaurant, hospital, factory, canteen, school, or other place where meals are supplied to many people, the number of potential victims is correspondingly greater."

A special case of commercial feeding arises in air travel which poses a number of unique problems. Instances have been reported of entire air crews having been taken ill with food poisoning simultaneously in flight with serious implications for the safety of the passengers and aircraft.

Food Hygiene Programs

In underdeveloped areas, food hygiene programs are usually faced with "problems of public inertia and apathy, with woeful sanitary conditions and practices, and with shortage of adequate means." A start, however, must be urged and the first step should be the development of a trained field staff followed by the complementary services such as laboratories and training institutes. The report emphasizes the "desirability of developing food hygiene programs within the context of a developing general public health program."

In rapidly developing areas the situation is usually encouraging—inertia has been overcome; poverty, ignorance, and disease are on the wane. Food hygiene programs must keep pace with these changes: more advanced training should be given to field staff; health education of the public should be improved; research work should be developed; and higher standards should be set for food production and processing.

Many highly developed areas have now reached a point where the most needed elements of food hygiene are in full operation. The general objective in such an area is to maintain an effective economical program and to bear in mind that "eternal vigilance is the price of safety."

Suggested general fields of activity are given in the report as a guide in the establishment of new programs or in the revision of existing programs in food hygiene:

1. Clean food-handling methods are a primary requisite; the practice of workers performing individual food-handling operations should be studied.
2. Field men should be on the alert for the improper use of chemicals in food establishments.
3. The proper control of vermin and rodents is a necessary food hygiene activity.
4. Only healthy animals should be used in the production of food.
5. Reporting, investigating, and publicizing outbreaks of food poisoning or other foodborne diseases are means of creating official and public interest in food hygiene programs.

Health education, both of the public and of those engaged in the food industry, should not be restricted to one-way methods such as radio, television, lectures, films, and newspaper articles, but should be as wide as possible and include such activities as discussions, interviews, drama, and live demonstrations. Local participation in programs of food hygiene can often be enlisted by the appointment of advisory committees.

Legislation should be flexible enough to keep pace with scientific and technical advances. For this reason it is suggested that "it is an advantage to have the basic legislation embodied in statutes and to set forth the more detailed and technical provisions in regulations made by those having the statutory power to do so."

The report points out that very careful attention must be paid to the education and training of personnel, particularly the health inspectors on whom

the bulk of the work in promoting food hygiene will fall. The duties of health inspectors include the inspection of foodstuffs, food sampling, the inspection of premises in which food is handled, the education of food handlers, and the investigation of outbreaks of foodborne disease. (Reports of Expert Groups - Food Hygiene: Chronicle of the World Health Organization, 10: 172-174, June 1956)

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Viral Infections During Pregnancy

The importance of virus infections in man is still essentially unknown, although advances in virological laboratory techniques during the last decade have opened the pathway for a better understanding of this problem.

The effect of rubella infections in the first trimester of pregnancy is well known and the use of prophylactic gamma globulin is a recognized medical procedure. The effect of other viral infections on the pregnancy and the fetus are less well-known and tend to be ignored. An article entitled, Viral Infections in the Embryo, by J. M. Adams, et al., in the A. M. A. Journal of Diseases of Children, Vol. 92, No. 2, pages 109-114, August 1956, offers a brief review of the literature and some experimental work which indicates that other virus infections during the first 4 months of pregnency are important causes of abortion and fetal abnormalities. This points up the need for more concern on the part of the obstetrician and pediatrician for even the very mild infections of the mother.

The only approach to the problem of virus diseases known at the present time is that of prevention. Development of preventive measures depends on etiological identification of the virus diseases causing problems. Only after the etiological identification of such viruses has been accomplished can vaccines or specific hyperimmune serum be prepared. Gamma globulin contains a variety of antibodies against etiologic agents which are common in the population as a whole. When one particular virus, or group of viruses, is known to create frequent problems, sera can be selected on the basis of antibody content to these viruses and a highly potent gamma globulin can be prepared, whereas methods of pooling unselected sera may result in ordinary gamma globulin having little protective ability.

Looking into the future, common infections might be prevented with vaccines, and less common ones might be modified or prevented with specific hyperimmune serum or gamma globulin in special circumstances such as pregnancy. This is only one more reason why doctors should demand availability of up-to-date virological diagnostic facilities. The results often are of little importance in the case of the individual patient during his or her acute illness, but may be of vital importance in the prevention of such tragedies as abortions and congenital abnormalities in the future. (Captain John R. Seal MC USN PrevMedDiv, BuMed)

Emergency Electric Power in Operating Suites

A recent report from a large naval hospital indicated that during a power failure the following potentially grave deficiencies were noted in the emergency hookup in the main operating suite:

1. The time interval between power failure and establishment of emergency supply was nearly 10 minutes.
2. The wall circuits, particularly those supplying suction apparatus, were not hooked into the emergency supply.
3. The overhead operating light in one of the operating rooms was not hooked into the emergency supply.

Because of the obvious possibility of loss of life resulting from deficiencies of this type, it is suggested: (a) that hospitals hold appropriate periodic drills which would expose to view deficiencies of this type; and (b) that it might be advisable to store sufficient emergency battery lamps for use in case of a prolonged blackout. Although is is recognized that these wet cell battery lamps are not explosion-proof, it is believed that in the event of total darkness they could be used with a calculated risk.

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